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The Effect of Renderforest Application-Based Learning Media and Teacher Creativity on Student Learning Motivation at St. John Catholic Elementary School 1 Tomohon

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Abstract

This study aims to analyze the impact of Renderforest-based learning media and teacher creativity on student learning motivation at SD Katolik I St. Yohanes Tomohon. Motivated by the observed lack of student motivation, evidenced by low participation, initiative, and perseverance in completing tasks, this research explores how digital media and teacher creativity can enhance learning motivation. Using a quantitative approach with simple regression and multiple regression analysis, the study finds that Renderforest-based learning media has a strong positive influence on students' learning motivation, contributing 99.4%. This shows that Renderforest significantly enhances student interest, attention, participation, and enthusiasm during learning. Additionally, teacher creativity also proves to have a significant impact, contributing 97.2% to motivation. Teachers' ability to design innovative lessons, effectively use media, create a positive learning environment, and adapt to students' needs is crucial in boosting motivation. Furthermore, the combination of Renderforest media and teacher creativity together accounts for 99.4% of the variance in students' motivation, indicating a significant contribution. The findings suggest that integrating innovative learning technology with teacher creativity is an effective strategy to enhance motivation in the digital era. This research emphasizes that both Renderforest-based learning media and teacher creativity are essential factors in increasing learning motivation at SD Katolik I St. Yohanes Tomohon.

Keywords: renderforest application-based learning media, teacher creativity, and learning motivation

INTRODUCTION

Education serves as the primary foundation for holistic human development. (Law of the Republic of Indonesia Number 20 of 2003 Concerning the National Education System, 2003) System defines education as a conscious and planned effort to create a learning atmosphere and learning process that enables students to actively develop their potential for religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation, and state. This definition underscores that education aims not merely to transfer knowledge but to cultivate intellectually and characterfully complete individuals. At the elementary school level, this foundational stage is particularly crucial as students undergo rapid cognitive, affective, and psychomotor development, necessitating learning processes that are comprehensive, enjoyable, and developmentally appropriate.

Basic education, especially at the elementary school (SD) level, is a very crucial stage in the formation of students' initial competencies (Pellas et al., 2020). At this stage, students are in a period of rapid cognitive, affective, and psychomotor development. Therefore, the learning process in elementary school needs to be designed thoroughly, fun, and in accordance with the characteristics of the child's age. (Hew & Brush, 2007)One of the important components in the

success of the teaching and learning process at the elementary level is student learning motivation. Learning motivation is an internal factor that greatly determines the level of involvement, enthusiasm, and effort of students in understanding the subject matter and achieving optimal learning outcomes (Nikou & Economides, 2017).

But in reality, many teachers in the field face problems related to low student motivation to learn (Tondeur et al., 2017). Symptoms such as students who are less active in class, quickly feel bored, do not complete assignments well, and lack initiative in learning activities are indications of a decrease in learning motivation. This problem is partly caused by the use of learning media that are less interesting or less varied and the creativity of teachers who have not been maximized in designing and presenting learning.

Advances in information and communication technology open up great opportunities for the world of education to innovate learning. One of the relevant forms of innovation is the use of digital media in the form of educational animation videos, which can attract students' attention and make it easier for them to understand lesson concepts (Basilaia & Kvavadze, 2020). One of the applications that is now starting to be used is Renderforest, a cloud-based platform that provides a variety of templates for creating learning videos, infographics, and interactive animations. This app allows teachers to create content that is engaging, visual, and tailored to students' needs. According to (Anisah et al., 2024), the use of the Renderforest application in learning has been proven to increase the attractiveness of the material and can increase student participation in learning activities.

However, no matter how sophisticated the learning media used, its success is still greatly influenced by the role of the teacher as the main facilitator in learning. In this case, the creativity of teachers is an important factor that determines how the media is implemented effectively. Teachers' creativity includes the ability to design innovative learning strategies, choose appropriate media, organize interesting activities, and respond dynamically to students' needs and characteristics. Creative teachers are able to turn the classroom atmosphere into a more lively one and make learning a fun experience for students (Hattie & Timperley, 2007). (Setiati, 2022) stated that teachers' creativity has a significant effect on students' learning motivation because innovative teachers are able to build a learning environment that provokes students' curiosity and enthusiasm for learning.

The novelty of this research lies in its integrated examination of both Renderforest-based learning media and teacher creativity as simultaneous predictors of student learning motivation within a single analytical framework. This study introduces several novel elements. First, it extends previous research by (Aeni et al., 2022) and (Anisah et al., 2024) by quantifying the precise contribution of Renderforest media to motivation variance (99.4%) using rigorous regression analysis. Second, it contributes to the literature on teacher creativity by (Sulastri, 2021) and (Pramono & Widayati, 2020) by empirically demonstrating the magnitude of creativity's contribution (97.2%). Third, and most importantly, this study uniquely examines the combined effect of both variables, revealing that together they account for 99.4% of motivation variance, providing unprecedented empirical evidence of their collective importance. Fourth, the study situates these findings within the specific context of a Catholic elementary school in Tomohon, Indonesia, addressing a geographical and institutional gap in the literature.

Thus, the Renderforest application-based learning media and teacher creativity can be seen as two important variables that have great potential in increasing student learning motivation, especially at the elementary school level. The two complement each other: the media as an auxiliary, and the teacher as the manager and director.

Based on initial observations made at SD Katolik I St. John Tomohon on the entire research population of 99 students, consisting of 38 grade IV students, 27 grade V students, and 34 grade VI students, it was found that the 99 students showed indications of low motivation to learn in the learning process. These indications can be seen from the lack of participation during learning, lack of initiative to ask questions, delays in completing assignments, and lack of focus when teachers deliver material. This condition raises concerns about the quality of the learning process and students' academic achievements. Therefore, solutions are needed in the form of updates in learning methods that utilize technology, as well as increasing teachers' creativity in delivering materials.

The use of the Renderforest application combined with the creativity of teachers is believed to be an effective approach in creating a learning atmosphere that is fun, interactive, and in accordance with the characteristics of students in the digital era. With this background, it is important to conduct research entitled: "The Influence of Renderforest Application-Based Learning Media and Teacher Creativity on the Learning Motivation of Students of SD Katolik I St. John Tomohon." This research is expected to make an empirical contribution to the development of technology-based learning strategies and encourage the improvement of teachers' professionalism in creating more meaningful and motivating learning.

METHOD

This study uses a quantitative approach, which focuses on the collection and analysis of numerical data to test hypotheses and explain social phenomena. This approach is rooted in the philosophy of positivism, which emphasizes empirical observation and objective measurement. According to (Patonah et al., 2020), a quantitative approach is used to research on a specific population or sample, with sampling techniques that are generally carried out randomly, using objective research instruments, and statistical data analysis to test the hypothesis that has been established.

Data Collection Techniques and Procedures

The data collection technique used in this study is a questionnaire. A questionnaire is a data collection tool in the form of a series of questions or statements given to respondents to be answered. Questionnaires are often used in quantitative research to obtain information or data about the attitudes, opinions, behaviors, or characteristics of individuals or groups.

The research instrument contains a number of statements that must be responded to by respondents to find out information about the three variables discussed. The development of the instrument goes through several stages, namely (1) Determining the Research Objectives and Variables, (2) Developing a Theoretical Framework, (3) Determining the Type of Questions, (4) Compiling Question Items, (5) Compiling the Measurement Scale, calculating the validity and realism of the research instrument and (6) Testing the Instrument (Validity and Reliability). The variables that will be made in the questionnaire are first made a conceptual definition, operational definition and a grid of research instruments.

Data Analysis Techniques

The collected data is analyzed to test whether the hypothesis that has been established can be accepted or rejected. Before the data analysis is held, the following analysis requirements test process has been carried out:

Regression Analysis Requirements Test (Assumptions)

- **Normality Test**: For this test, the Kolmogrov Sminov (KS) formula was used. If a significant value of p is found > a significant level of $\alpha = 0.05$, then the data is considered to be normal. If the p value is $< \alpha$ on the other hand, the data is considered not to be normally distributed, so regression analysis is not possible. If the data turns out to be abnormal, then as an alternative, it is held in a non-parametic analysis.
- **Linearity Test:** Due to regression analysis, the assumption of the linearity of the relationship between variable X and variable Y must be met, for which a linearity test is required through the F test within the framework of variance analysis, which is in SPSS 27 through ANOVA analysis. If the value of F- is calculated to be greater than the value of F-Table, then there is a linear relationship between variable X and variable Y.
- **Regression analysis:** Simple regression analysis and multiple regression analysis.

Furthermore, to test the hypothesis, the F-test will be used. If the value of F-calculates > of the value of F- Table or the value of p-< 0.05, then an alternative hypothesis is accepted.

RESULTS AND DISCUSSION

This research was carried out at SD Katolik I Santohanes Tomohon, specifically in grades IV, V, and VI. The total number of students in the three classes is 99, with details as follows: grade IV consists of 38 students, grade V consists of 27 students, and grade VI consists of 34 students. From this total population, a research sample of 60 students was purposively selected to obtain an adequate representation of each class and ensure that the data collected would reflect the real conditions in the school.

Data collection in this study was conducted using questionnaires, which were distributed directly to the students who participated in the sample. The questionnaire was designed to measure three main variables: (1) student learning motivation, including students' interest, perseverance, and involvement in the learning process; (2) students' responses to the use of the Renderforest application as a learning medium; and (3) students' perceptions of the teacher's creativity in presenting the material. The assessment scale used allowed researchers to obtain quantitative data while capturing students' perceptions objectively regarding the media and methods applied by teachers.

The results of the questionnaire showed that most students responded positively to the use of the Renderforest application. The animation-based learning media and interactive videos produced by Renderforest were found to make the material easier to understand, engaging, and fun. This shows that the use of this digital media can increase the attractiveness of learning and help teachers deliver material more effectively.

In addition, the data also confirms that teachers' creativity plays an important role in the success of the learning process. Teachers who are able to design materials innovatively, combine various learning media, and present materials with strategies that suit the characteristics of students tend to create a more active and enjoyable learning atmosphere. This creativity directly

affects students' learning motivation, as students feel more interested, excited, and motivated to participate in learning (Lai & Zheng, 2018).

Overall, the data description shows that the combination of using the Renderforest application and the teacher's creativity makes a positive contribution to students' motivation to learn. Engaging learning media, combined with teachers' creativity, increases student involvement in the learning process, encourages active participation, and arouses interest and perseverance in learning (Cheung & Slavin, 2013). These findings affirm the importance of integrating digital technology and educator creativity in efforts to improve the quality of the teaching and learning process at the elementary school level (Sung et al., 2016).

Analysis of Determination Coefficient (Adjusted R^2) The Effect of Renderforest Application Variables on Learning Motivation Variables

Determination analysis was used to calculate the percentage contribution of the influence of the Renderforest application variable on the learning motivation variable. The results of the determination analysis can be seen in the SPSS 27 Model Summary output from the results of the simple regression analysis below:

Table 1. Simple Regression Model Summary for the Effect of Renderforest Application on Learning Motivation

Model Summary

Models	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.997a	.994	.994	.260

Predictors: (Constant), Aplikasi_Renderforest
Dependent Variables, Learning Motivation

Based on the table, the *R. Square number* is 0.994 or 99.4%. This shows that the percentage of contribution of the influence of independent variables of the Renderforest Application on learning motivation is 99.4%. While the rest are influenced by other variables that are not studied in this research model.

Analysis of Determination Coefficient (Adjusted R^2) The Influence of Teacher Creativity Variables on Learning Motivation Variables

Determination analysis was used to determine the percentage of contribution of the influence of the teacher's creativity variable on the variable of learning motivation. The results of the determination analysis can be seen in the output of SPSS 27 *Moddel Summary* from the results of the following simple regression analysis:

Table 2. Simple Regression Model Summary for the Effect of Teacher Creativity on Learning Motivation

Model Summary

Models	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.986a	.972	.972	.539

Predictors: (Constant), Kreativitas_Guru
Dependent Variables, Learning Motivation

Based on the table, the *R. Square number* is 0.972 or 97.2%. This shows that the percentage of contribution to the influence of independent variables of teacher creativity on learning motivation is 97.2%. While the rest are influenced by other variables that are not studied in this research model (Zheng et al., 2016).

Analysis of Determination Coefficient (Adjusted R^2) The Influence of Renderforest Application Variables and Teacher Creativity Together on Learning Motivation Variables.

Determination analysis was used to determine the percentage contribution of the influence of the Renderforest Application variables and teachers' creativity together on the variables of learning motivation. The results of the determination analysis can be seen in the output of the SPSS 27 *Moddel Summary* from the results of the multiple linear regression analysis below:

Table 3. Multiple Regression Model Summary for the Combined Effect of Renderforest Application and Teacher Creativity on Learning Motivation

Model Summary

Models	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.997a	.994	.994	.243

Predictors: (Constant), Kreativitas_Guru, Aplikasi_Renderforest
Dependent Variables, Learning Motivation

Based on the table, the Adjusted R^2 value is 0.994 or 99.4%. This shows that the percentage of contribution of the influence of the independent variables, Renderforest application and teachers' creativity, together on learning motivation is 99.4%. The rest is influenced by other variables that are not studied in this research model.

The Influence of Renderforest Applications on Learning Motivation

Based on the above hypothesis test, it is proven that the Renderforest app has a positive and significant effect on the level of learning motivation of students at SD Katolik I Santohanes Tomohon. This shows that the better the use of the Renderforest application, the more it can increase the learning motivation of students at SD Katolik I Santohanes Tomohon. Application-based learning media, Renderforest, is a learning video application and animated presentation created using the features of the Renderforest application and displayed to students in the learning process in the classroom. This media is assessed based on visual and audio quality, suitability of content with subject matter, level of interactivity, and frequency of use by teachers in teaching and learning activities.

Based on the results of the determination coefficient calculation, the effective contribution of the Renderforest application on the learning motivation of students at SD Katolik I Santo John Mapanget-Barat is 99.4%. The rest is determined by other variables that were not studied in this study. Thus, the Renderforest app has had a positive influence on the learning motivation of students at SD Katolik I Santohanes Tomohon.

This is in line with research conducted by (Nur Aeni et al., 2022), which found that Renderforest-based animation video media is very feasible to use and can increase the

motivation of elementary school students, as well as research by (Trian et al., 2025), which shows that Renderforest can increase the creativity of learning media creators.

From the description above, it can be concluded that the use of the Renderforest application plays an important role in the current learning process. This application helps teachers and students more easily carry out the learning process because the media produced is more interesting, interactive, and easy to understand, which can increase motivation, involvement, and effectiveness of learning in the classroom (Mayer, 2019).

Based on the results of this research, the students became more knowledgeable about the use of the Renderforest application. Thus, this has an impact on students' learning motivation because the better the use of this application, the higher the level of student learning motivation at SD Katolik I Santohanes Tomohon.

The Influence of Teachers' Creativity on Learning Motivation

The results of the study show that teachers' creativity positively and significantly affects the learning motivation of students at SD Katolik I Santohanes Tomohon. This shows that the better the level of teacher creativity, the more it can increase the learning motivation of students at SD Katolik I Santohanes Tomohon. Based on the calculation of the determination coefficient, the effective contribution of the influence of teacher creativity on the learning motivation of students at SD Katolik I Santohanes Tomohon is 97.2%. The rest is determined by other variables that cannot be explained individually or are not discussed in this study. Thus, the variable of teacher creativity has had such a great influence on the learning motivation of students at SD Katolik I Santohanes Tomohon.

This is in line with research conducted by (Sulastri, 2021), which shows that teachers' creativity in designing and presenting learning media has a significant effect on increasing student motivation and learning engagement, because creative teachers are able to present more varied, interesting, and meaningful learning. This research is also in line with that conducted by (Pramono & Widayati, 2020), who found that teachers' creativity in utilizing various media and learning strategies can create a more active and fun learning atmosphere, thereby encouraging students to be more motivated to follow the learning process.

Based on the results of research at SD Katolik I Santohanes Tomohon, it can be concluded that creative teachers are very influential in the educational process of students. Therefore, creativity is absolutely needed from educators in fun ways that can make students active and motivated to continue learning, so that the correct understanding of students will make educational patterns and activities optimal.

The Influence of Renderforest Applications and Teacher Creativity on Learning Motivation

Based on the results of the hypothesis test, it was proven that the application of the Renderforest and the creativity of teachers together had a positive and significant effect on the learning motivation of students at SD Katolik I Santohanes Tomohon. This is evidenced by the results of the calculation of the determination coefficient, namely that the application of Renderforest and the creativity of teachers together have an influence on the learning motivation of students at SD Katolik I Santohanes Tomohon by 99.4%. The rest is determined by other variables that are not discussed in this study. Thus, based on the results of the research, variables X1 (application of Renderforest) and variable X2 (teacher creativity) have had a

positive and significant influence on the learning motivation of students at SD Katolik I Santohanes Tomohon.

CONCLUSION

After describing and analyzing the research on "The Influence of Renderforest Application and Teacher Creativity on the Learning Motivation of Students of SD Catholic I Santo John Tomohon", it can be concluded as follows: 1) In the hypothesis test, based on the results of the determination coefficient calculation, the effective contribution of the influence of the Renderforest application on student learning motivation at SD Catholic I Santo John Tomohon was 0.994 or 99.4%. Therefore, the Renderforest application has a positive and significant influence on the learning motivation of students at SD Catholic I Santo John Tomohon. 2) In the hypothesis test, based on the calculation of the effective contribution determination coefficient, the influence of teacher creativity variables on the learning motivation of students at SD Catholic I Santo John Tomohon was 0.972 or 97.2%. Thus, the teacher creativity variable has a positive and significant influence on the learning motivation of students at SD Catholic I Santo John Tomohon. 3) In the hypothesis test, based on the multiple regression analysis conducted, there was a significant influence between the Renderforest application and teacher creativity together on students' learning motivation. Furthermore, based on the results of the determination coefficient calculation, the Renderforest application and teacher creativity together have an influence on the learning motivation of students at SD Catholic I Santo John Tomohon by 0.994 or 99.4%. The rest is determined by other variables not studied in this research.

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